

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TENNESSEE
AT CHATTANOOGA**

CARD-MONROE CORP.,)	
)	Case No. 1:14-cv-292
<i>Plaintiff,</i>)	
)	Judge Travis R. McDonough
v.)	
)	Magistrate Judge Christopher H. Steger
TUFTCO CORP.,)	
)	
<i>Defendant.</i>)	

MEMORANDUM OPINION

On October 7, 2014, Card-Monroe Corp. (“CMC”) filed a Complaint (Doc. 1) against Tuftco Corp. (“Tuftco”) alleging infringement of three patents (the “Patents”): United States Patents 8,141,505 (“the ‘505 Patent”), 8,776,703 (“the ‘703 Patent”), and 8,399,989 (“the ‘989 Patent”).¹ This matter is before the Court for construction of disputed claim terms pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996). The Court identified ten significant terms for construction on February 10, 2016. (Doc. 170.) The parties conducted briefing on those terms, and the Court held a hearing on April 19, 2016 (the “*Markman* hearing”).

¹ The patents appear throughout the docket several times attached to various motions. Rather than citing to a particular docket number, the Court will cite to each by the last three digits of the patent number, and then cite to the text of the patent by column and line number where appropriate, for example (‘989 Patent 1:1–5). The patents initially appear on the docket attached to the Complaint: Docs. 1-1, 1-2, and 1-3.

I. BACKGROUND

The dispute involves three Patents for carpet-tufting technology. The patented technology involves the

synchronization of yarn feed control, shifting needle bars, and controlling movement of the backing material through the tufting machine to enable the formation of tufts or stitches at an increased, effective stitch rate whereby a greater number of stitches or tufts of yarns are introduced or presented into the backing and those tufts not desired or wanted to be shown as part of the pattern being formed can be pulled low or out of the backing

(Doc. 173, at 5.) This method enables more precise color placement, which accommodates more intricate pattern designs while preserving sharpness and definition. (*Id.*) CMC’s three Patents cover both the methods and the system used to produce tufted carpets. CMC alleges that Tuftco—a competing manufacturer of carpet machines—created and markets infringing technology. (Doc. 1.)

II. STANDARD OF REVIEW

Claim construction is a question of law for the Court. *Markman*, 517 U.S. at 391. However, as part of its claim construction ruling, the Court may make factual findings. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 838 (2015). The words of a claim “are generally given their ordinary and customary meaning” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). But “the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005).

In determining the meaning of claim terms, all sources of evidence are not equal. Intrinsic evidence—the patent claims, the specification, and the prosecution history—is given preference over extrinsic evidence—dictionaries, treatises, and inventor and expert testimony. *See Phillips*, 415 F.3d at 1315–18.

The words of the claims themselves are the starting point for a construction analysis, and the words are typically given their ordinary meaning. *Vitronics*, 90 F.3d at 1582. From the words of the claim, the Court then proceeds to the claim specification, which “is always highly relevant” and usually dispositive. *Id.* at 1582. “[A] patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.” *Id.* Finally, “the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be” but because it is an account of the back and forth negotiation, “it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Phillips*, 415 F.3d at 1317.

If the meaning of the claim term is still ambiguous after considering intrinsic evidence, the Court may consider extrinsic evidence

for a variety of purposes, such as to provide background on the technology at issue, to explain how an invention works, to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.

Id. at 1318. Such evidence must be discounted if it conflicts with the construction mandated by the intrinsic evidence. *Key Pharms. v. Hercon Labs. Corp.*, 161 F.3d 709, 716 (Fed. Cir. 1998).

III. ANALYSIS

After hearing arguments from both parties at the *Markman* hearing, the Court noted that the parties were much closer to agreement on several terms than prior filings reflected. (Doc. 219, at 129.) Based upon the parties’ positions at the hearing, the Court proposed draft constructions of several terms it thought both parties might find agreeable. (*Id.*) The parties

agreed to all but one of the Court’s proposed term constructions. (*Id.* at 131.) Accordingly, by agreement of the parties, those terms are defined as follows:

- **Effective stitch rate/effective process stitch rate:** “The number of tufts of yarn inserted into the backing per linear inch in the longitudinal direction”
- **Stitch**² (as a noun): “A tuft of yarn inserted in the backing of the carpet”
- **Backrobbing:** “Feeding little or no yarn to pull one or more tufts of yarn low or out of the backing”
- **Desired yarn:** “A yarn tuft retained in the face of the pattern in accordance with the pattern instructions”

(Doc. 212-1.) The Court also proposed a construction of “desired stitch rate,” but Tuftco did not agree with the Court’s proposed construction. (Doc. 219, at 131–32.) The Court will address the remaining disputed terms below.

A. “Desired fabric stitch rate” / “desired stitch rate” / “prescribed stitch rate”

CMC’s Proposed Construction	Tuftco’s Proposed Construction
“the number of yarns or tufts per linear inch that the carpet designer wants to be visible in the face of the pattern being tufted.” (Doc. 173, at 9.)	“the number of tufts of yarns per linear inch that the carpet design provides are visible in the face of the pattern, which is the same number that is entered in the tufting machine controls or design program.” (Doc. 182, at 4.)

These terms appear in Claim 8 of the ‘505 Patent, in Claims 1, 22, 27, 28, and 29 of the ‘989 Patent, and in Claims 1, 28, and 29 of the ‘703 Patent. Both parties agree these three terms should be construed synonymously but disagree slightly on the construction.

² The parties also agreed “stitch” does not need construction where contained within another disputed term such as “desired stitch rate” or “effective stitch rate.” (Doc. 219, at 101.)

CMC's proposed construction for these terms is "the number of yarns or tufts per linear inch that the carpet designer wants to be visible in the face of the pattern being tufted." (Doc. 173, at 9.) The claims themselves support this construction, as do the specifications. For example, Claim 8 of the '505 Patent provides for a calculation increased "by a desired fabric stitch rate that comprises a number of stitches per inch desired for the patterned tufted articles." The '505 Patent's specification confirms that "the number of high tufts (the colors that are visible in the tufted article), generally can be matched to the desired stitch rate for the tufting machine." ('505 Patent 9:26–30.) Claim 29 of the '703 Patent similarly provides that the tufted article is formed "so as to form the patterned article with the number of high tufts formed substantially matching the desired stitch rate" Finally, the specification of the '989 Patent contains similar language. (*See, e.g.*, '989 Patent 6:59–64 ("multiplied by a desired or prescribed fabric stitch rate or number of retained stitches per inch or pattern density desired to appear on the face of the tufted article").)³

Tuftco has proposed two slightly different constructions in its opening and responsive claim construction briefs. Its opening brief suggests the terms be construed as "the stitch rate set in the tufting machine controls or design program." (Doc. 174, at 13.) Its responsive brief suggests the terms mean "the number of tufts of yarns per linear inch that the carpet design provides are visible in the face of the pattern, which is the same number that is entered in the tufting machine controls or design program." (Doc. 182, at 5.) At the *Markman* hearing, Tuftco persisted in the construction embraced in the responsive brief. (Doc. 219, at 72–74.)

³ Though less relevant when intrinsic evidence is strong, this reading is confirmed by expert testimony. (Doc. 113-12, at 7 (opining that those skilled in the art would understand the terms as meaning "the desired number of tufts per linear inch to be retained or visible in the backing material for a pattern being tufted.")).

Tuftco identifies two chief disagreements with CMC's proposal. First, Tuftco argues CMC's definition is unworkable because it treats "yarns" and "tufts" as synonymous while the rest of the claims do not. (Doc. 182, at 4.) According to Tuftco, unlike tufts, yarns can include material that does not appear on the face of the carpet. (*Id.*) Therefore, to use them synonymously is inappropriate. (*See, e.g.*, 989 Patent, Cl. 22 (describing a process of "feeding a plurality of yarns to a series of needles carried by a shiftable needle bar").) Instead, it proposes "tufts or yarns" be replaced with "tufts of yarn." (Doc. 182, at 5.) At the *Markman* hearing, CMC agreed with this proposed revision. (*See* Doc. 219, at 24–25.) Second, Tuftco disagrees that the term should be defined by what the designer "wants" to be shown. (Doc. 182, at 5.) Tuftco argues there is no objective way to determine what a designer wants, so the term should be construed as the rate that is actually entered into the control program. (*Id.*) And, it points to several places within the Patents themselves that describe the "prescribed" or "desired" rate as the "programmed" rate. ('505 Patent 2: 3–6; '703 Patent 2:12–15; '989 Patent 2:38–40.)

CMC disagrees strongly with Tuftco's argument that the term be limited to the numerical value the designer inputs into the control system. (Doc. 186, at 10–11.) Rather, CMC contends the natural reading of the terms in the context of the claims and specification is that this rate refers to the stitches desired to be visible. (*Id.* at 11.) Otherwise, a competitor could practice the method by calculating the effective stitch rate based on the desired stitch rate but only inputting the effective stitch rate. (*Id.*) In fact, this is what Tuftco's user manuals instruct customers to do. (*See, e.g.*, Doc. 186-4, iTuft User Manual ("Enter your stitches per inch. This is calculated by multiplying the desired stitches per inch times the number of colors in the pattern.").)

At the *Markman* hearing, the Court proposed that the terms be defined as "the number of tufts of yarn per linear inch dictated by the pattern design to be visible in the face of the pattern."

(Doc. 212, at 1.) CMC agreed with the proposed definition (*see* Doc. 212-1; Doc. 219, at 130–131), but Tuftco insisted on including the limitation that the desired rate actually be entered into the control system (Doc. 219, at 131–33). Tuftco proposed that the Court’s construction be modified to “[t]he number of tufts of yarn per linear inch entered into the machine control system to be visible in the face of the pattern.” (Doc. 212-1, at 2.)

Having considered the parties’ positions and the relevant evidence, the Court concludes that the Patents do not limit “desired stitch rate” to a particular numerical value entered into the control system. Case law is clear that the Court should not lightly read limitations from the specifications into the claims. *Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009) (“The patentee is entitled to the full scope of his claims, and we will not limit him to his preferred embodiment or import a limitation from the specification into the claims.”); *Phillips*, 415 F.3d at 1323 (emphasizing the importance of not importing limitations from the specification into the claims). None of the claims refers to the “desired stitch rate” as the programmed rate; such language occurs only in the specifications.

Though the specifications refer to the “prescribed rate” as the “programmed rate,” none of the language suggests that this “programmed” rate must necessarily be a number specifically entered into the control system. In the ‘505 Patent, for example, the “backing material is fed at a programmed or prescribed rate of feeding or desired stitch rate,” but the specification does not say it is fed *at a particular numerical rate entered into the control system*. (*See* ‘505 Patent 2:3–6.) Even the language from the ‘989 Patent on which Tuftco relies makes no suggestion that the invention is necessarily limited by a particular number entered into the control system: “A backing material is fed at a programmed or prescribed rate of feeding through the tufting zone for tufting the yarns therein.” (*See* ‘989 Patent 2:38–40.)

Anyone with a basic understanding of computers—and certainly one skilled in the art of these complex machines—would understand that not every rate that is “programmed” is directly entered into the computer. Consider, for example, a Tetris®-type computer game in which difficulty is determined by the rate at which blocks descend and in which the designer wants to give players the ability to control the difficulty. This goal could be accomplished in at least two ways: 1) the program could allow the player to set the difficulty by inputting a particular rate of blocks per second; or 2) the program could ask the player to input a particular level of difficulty—on a scale of one-to-ten—which the computer would then convert to a particular rate. In both of these applications, the rate at which the blocks descend would be a “programmed” rate, but in only one of these applications is the rate a number actually entered by the user. This analogy demonstrates that a “programmed” rate is not *necessarily* entered into a device by the user.

Tuftco’s user manual demonstrates this distinction in the context of these claims and confirms that a desired rate could be programmed without a designer actually entering any particular number into the control system. The manual directs the user to “[e]nter your stitches per inch. This is calculated by multiplying the desired stitches per inch times the number of colors in the pattern.” (Doc. 186-4). Thus, the user is directed to enter a number associated with the effective process stitch rate rather than with the desired stitch rate. Tuftco’s proposed construction is unsupported by the language of the claims and is an unwarranted invitation to limit the claims in a way the industry would not.

Accordingly, the Court will decline to read into the Patents the programmed number limitation urged by Tuftco and will construe “desired fabric stitch rate,” “desired stitch rate,” and

“prescribed stitch rate” as “the number of tufts of yarn per linear inch dictated by the pattern design to be visible in the face of the pattern.”

B. “Substantially” and “Approximately”

CMC’s Proposed Construction	Tuftco’s Proposed Construction
No Construction needed. (Doc. 173, at 16.)	When used to qualify a numerical value: “a number that can be rounded to the number that is qualified.” (Doc. 182, at 7.) When used as “substantially hidden”: “tufts that are not visible upon casual inspection of the tufted article.” (Doc. 182, at 7.)

“Substantially” appears in Claims 8 and 10 of the ‘505 Patent and Claim 29 of the ‘703 Patent. “Approximately” appears in Claims 21, 22, 27, and 28 of the ‘989 Patent and Claim 12 of the ‘505 Patent. Both “substantially” and “approximately” are used as terms of degree, and both parties agree they can be construed together. (Doc. 173, at 16; Doc. 182, at 7.) The Patents predominantly use both of these terms in conjunction with particular stitch rates. For example, in the ‘505 Patent “approximately” appears in Claim 12, which provides for a desired stitch rate of “approximately ten stitches per inch.” (‘505 Patent 11:8.) Claim 29 of the ‘703 Patent provides that the machine should be run “so as to form the patterned article with the number of high tufts formed substantially matching the desired stitch rate” (‘703 Patent 12:52–54.) CMC argues no construction of these terms is necessary; rather, CMC asserts the terms should take their plain ordinary meaning because they are common qualifying words that do not need additional construction. (Doc. 173, at 16.) Tuftco argues that if “substantially” and “approximately” are used to modify a numerical value, then they should be construed as “a number that can be rounded to the number that is qualified.” (Doc. 182, at 7.) If “substantially”

is used in context of “substantially hiding/hidden” then it should be construed as “tufts that are not visible upon casual inspection of the tufted article.” (*Id.*)

CMC points to extensive case law stating that terms of degree like “approximately” and “substantially” do not normally need construction. (Doc. 173, at 17–18 (citing *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1369–72 (Fed. Cir. 2005) (construing term “about” that preceded numeric value to mean “approximately”); *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1326–28 (Fed. Cir. 2007) (in determining the range encompassed by the term “about” or “approximately,” one must consider the context of the term as it is used in the specification and claims of the application; defining ratio of “about 1:5” as part of a stated range “pointed to a broad range of ratios”); *Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1367 (Fed. Cir. 2001); *Andrew Corp. v. Gabriel Elecs. Inc.*, 847 F.2d 819, 821 (Fed. Cir. 1988) (“The criticized words [‘approach each other,’ ‘close to,’ ‘substantially equal,’ and ‘closely approximate’] are ubiquitous in patent claims. Such usages, when serving reasonably to describe the claimed subject matter to those of skill in the field of the invention, and to distinguish the claimed subject matter from the prior art, have been accepted in patent examination and upheld by the courts.”).)

Furthermore, CMC submitted expert testimony showing why such terms of degree are especially useful in this field. CMC’s expert explains that the real-world application of these Patents is necessarily limited by both the imprecision of the machinery at issue and the need for the machinery to allow for flexibility for designers working with different types of patterns and yarns.

One of skill in the art would understand that the values recited in the CMC patents have some leeway or variance, due to a variety of factors, including manufacturing tolerances, operator adjustments to the machines for forming various tufted patterns, and yarn size. Carpet tufting machines reciprocate

thousands of needles upwards of 1,000 times per minute, and thus the fact that values recited in the claims have some range or qualifying language is known and understood in the industry to compensate for such recognized variations or tolerances.

(Doc. 113-12, at 10.) The intrinsic evidence from the Patents discusses how the stitch rates can be manipulated at the margins to achieve particular carpet qualities—fabric weight, for example. (See, e.g., ‘989 Patent 16:9–13 (“As discussed above, this effective or operative process stitch rate typically is substantially higher than a fabric conventional stitch rate, which is generally based on machine gauge, though an operator can adjust it as needed to get a desired density fabric weight.”).) Such instructions confirm that the two stitch rates need only “substantially” or “approximately” match the ratios set forth in the claims.

Tuftco argues CMC’s proposed construction would render the term indefinite because it fails to inform one reasonably skilled in the art as to the proper scope of the claimed technology. (Doc. 219, at 86–87.) Tuftco likens these terms to the term under consideration in *Interval Licensing*, a case in which the Federal Circuit found the term “unobtrusive manner” as applied to a content display was indefinite because it is highly subjective and does not provide any context from which one skilled in the art could determine its meaning. 766 F.3d 1364, 1370 (Fed. Cir. 2014). In articulating this holding, however, the Federal Circuit contrasted the phrase “unobtrusive manner” with terms of degree from other cases that were held to be sufficiently definite. *Id.* Interestingly, two of those cases involved the word “substantially.” In both, the court held the term was not indefinite. See, e.g., *Eibel Process Co. v. Minnesota & Ontario Paper Co.*, 261 U.S. 45, 65–66 (1923) (holding that “substantial pitch” was sufficiently definite because one skilled in the art “had no difficulty . . . in determining what was the substantial pitch needed” to practice the invention); *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1335 (Fed. Cir. 2010) (finding that “substantially” was not indefinite). The rationale in *Interval*

Licensing is not particularly persuasive in construing the terms of degree at issue here. As used in the Patents, both “substantially” and “approximately” have a much more discernible meaning to one skilled in the art than “unobtrusive manner.”

The other cases Tuftco cites are similarly distinguishable. Some of those cases can be distinguished because, unlike here, the Patents at issue used much more precise numerical values expressed with decimal places that strongly suggested increased precision. *See, e.g., T.F.H. Publ’ns, Inc. v. Doskocil Mfg. Co.*, No. CIV.A. 08-4805 FLW, 2012 WL 715628, at *7 (D.N.J. Mar. 5, 2012), *aff’d* (June 5, 2013) (construing “about” in the context of a claim that said “water content is in the range of about 20.0 to 40.0% by weight with respect to that of said starch”); *Albemarle Corp. v. Great Lakes Chem. Corp.*, No. CIV.A. 02-505-A, 2007 WL 4589515, at *29 (M.D. La. Dec. 20, 2007) (construing the term “about” in the context of a claim that said “between about 11.0 and about 18”). Others are clearly premised on the particularities of the technology at issue. *See, e.g., BJ Servs. Co. v. Halliburton Energy Servs., Inc.*, 338 F.3d 1368, 1372 (Fed. Cir. 2003) (holding, on the basis of expert testimony, that one skilled in the art would understand the term “about 0.06” to encompass the range of experimental error occurring in the relevant measurement); *Noven Pharm., Inc. v. Watson Labs., Inc.*, No. 11-CV-5997 DMC MF, 2013 WL 2459925, at *2 (D.N.J. June 6, 2013) (construing the term about 0–70% to mean 0–70% subject to rounding error in the context of a pharmaceutical patent). Still other cases can be distinguished because they did not actually construe the term of degree, but, rather, held—on a summary judgment motion—that the accused product was outside any reasonable construction of the qualifying term. *See, e.g., Rubin v. Scotts Co. LLC*, No. 2:09-CV-02419-GMN, 2014 WL 289427, at *5 (D. Nev. Jan. 24, 2014), *aff’d*, 582 F. App’x 880 (Fed. Cir. 2014).

Here, “approximately” and “substantially” are not used to modify numbers that are specified out to decimal places, and the Court is not yet faced with summary judgment motions. The only evidence Tuftco has put forth to support the need for heightened precision in the subject technology is testimony from its expert, Ian Slattery. In his declaration, Slattery states

A person of ordinary skill in the art is aware that tufting machines, including but not limited to the embodiments of the Asserted Patents, are very precise machines which permit the stitches per inch, stitch rates, and density to be set in increments of one-tenths and even one-hundredths of an inch. When an operator of a tufting machine is instructed to set a desired fabric stitch rate at “approximately” ten stitches per inch, a person of ordinary skill would interpret that to mean a number of stitches per inch that can be rounded to ten. In that example, a person of ordinary skill in the art would understand that the number of stitches per inch could be set to any number between 9.5 and 10.4 stitches per inch and still be within the teachings of the Asserted Patents.

(Doc. 208-1, at 14.) But this declaration is somewhat undermined by testimony he gave before the Patent Trial and Appeal Board. In discussing the ‘505 Patent and prior art, Slattery stated “the amount of increase [from the desired stitch rate to the effective stitch rate] could vary significantly depending on the types of yarns and pile heights in a particular pattern.” (Doc. 25-1, at 37.) This testimony accords with CMC’s expert’s statements regarding why there may be some degree of leeway in the rates set forth in the Patents and undermines Slattery’s statement that the stitch rates would be understood to be as subject to only rounding error. The Court declines to construe “approximately” and “substantially” when modifying a numeric value.

As to the use of “substantially” in the context of “substantially hidden,” the Court likewise finds it unnecessary to construe this term. While “substantially hidden” may not be mathematically precise, Tuftco’s proposed construction— “tufts that are not visible upon casual inspection of the tufted article” (Doc. 182, at 7)—does not meaningfully clarify the term. Casual inspection can mean dramatically different things to different people. And, furthermore, Tuftco conceded at the *Markman* hearing that further construction would not likely be “of any real

consequence in the issues in this case” (Doc. 219, at 91.) The Court is mindful of the Federal Circuit’s admonition that claim construction not become “an obligatory exercise in redundancy.” *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Some line drawing is properly left for the trier of fact; “claim construction need not always purge every shred of ambiguity.” *Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 806 (Fed. Cir. 2007). Here, the Court concludes “substantially hidden” needs no further construction and should take its plain ordinary meaning.

Accordingly, the Court finds “substantially,” “approximately,” and “substantially hidden” should take their ordinary meanings and do not need construction.

C. “Density”

CMC’s Proposed Construction	Tuftco’s Proposed Construction
“the appearance of high or visible tufts of yarn per linear inch in the face of the tufted article that substantially matches the desired stitch rate.” (Doc. 173, at 18.)	“the number of high and low tufts per square inch in an area of the tufted article.” (Doc. 182, at 11.)

The term “density” appears in only two of the severed claims. Claim 8 of the ‘505 Patent provides for a method

wherein the feeding of the yarns to form the high and low tufts tracks the shifting of the needles so as to substantially maintain **density** of the tufts of yarns being formed in the backing material in a direction of the rows of tufts and location of the high tufts of yarns at desired positions across the backing to form the patterned tufted articles.

(‘505 Patent, 10:56–61(emphasis added).) Claim 28 of the ‘703 Patent provides “for the feeding of the backing material for the pattern of the tufted article so as to form the patterned article with an appearance of an increased **density**.” (‘703 Patent, 12:28–30 (emphasis added).)

CMC proposes “density” be construed as “the appearance of high or visible tufts of yarn per linear inch in the face of the tufted article that substantially matches the desired stitch rate.” (Doc. 173, at 18.) Tuftco proposes the term be defined as “the number of high and low tufts per square inch in the area of the tufted article.” (Doc. 182, at 11.) The two key differences between Tuftco’s construction and CMC’s construction are (1) Tuftco includes both high and low tufts while CMC includes only high tufts, and (2) Tuftco calculates density per square inch while CMC calculates density per linear inch.

The Court rejects Tuftco’s proposed construction and will adopt CMC’s. The linear construction is supported by both the claims and the specifications of the Patents at issue. For example, Claim 8 of the ‘505 Patent provides that the feeding and shifting of needles should “substantially maintain density . . . in a direction of the rows of tufts.” (‘505 Patent, 10:56–59.) A row is a linear—not a squared—measurement. Similarly, the specification of the ‘703 Patent teaches, “the present invention further generally will be operated at increased or denser stitch rates than conventional tufting processes.” (‘703 Patent, 2:67–3:2.) This text confirms the Patents are focused on linear density rather than squared density, because the specification speaks of the density of *stitch rates*—which, both parties acknowledge, are calculated on a per-inch, rather than a per-square-inch basis. (See also ‘703 Patent, 5:19–21 (“the backing material also is generally fed through the tufting machine at an increased or *denser stitch rate* to achieve a denser pattern or fill-in of the selected colors for the particular field of the pattern.” (emphasis added)); ‘703 Patent 5:28–30 (“the operative or effective stitch rate run by the yarn color placement system will be substantially higher or faster, and thus more dense than typical desired stitch rates.”).)

The claims also make clear “density” refers only to the high or visible tufts rather than both the high and low tufts. For example, Claim 8 of the ‘505 Patent provides for a method

wherein the feeding of the yarns to form the high and low tufts tracks the shifting of the needles so as to substantially maintain density of the tufts of yarns being formed in the backing material in a direction of the rows of tufts and location of the high tufts of yarns at desired positions across the backing to form the patterned tufted articles.

(‘505 Patent, 10:56–61.) It is helpful to break the claim language into two parts divided by the phrase “so as to.” The first part, which discusses the feeding and the shifting of the yarns, mentions both high and low tufts. The second, the part that discusses substantially maintaining density, only refers to high tufts, thus making clear that the density to which the claims refer is the density of high tufts. Claim 8 of the ‘703 Patent similarly provides for a process to form a patterned article “with an *appearance* of an increased density.” (‘703 Patent, 12:29–30 (emphasis added).) Though the claim language does not refer expressly to high tufts, the Patents are clear that the tufts intended to be shown—those that appear—are the high tufts. For example, the specification of the ‘989 Patent refers to “[t]he desired pattern density, i.e., the desired number of stitches per inch to appear on the face of the finished patterned tufted article” (‘989 Patent 6:59–61.) This confirms “density” refers to the number of stitches desired to appear on the face of the patterned article—the high tufts.

As support for its position that “density” accounts for both high and low tufts, Tuftco points to the following passage from the ‘505 Patent, which appears to contemplate accounting for both:

As a consequence, as the needle bar(s) is shifted during the formation of the pattern stitches, of each color to be taken out or back-robbed and thus hidden in the finished pattern article, the increased number of stitches per inch will provide sufficient enhanced density between the high and low tufts of the finished patterned tufted article to avoid a missing color or gap being shown or otherwise appearing in the patterned tufted article.

(505 Patent, at 3:3–10.) Tuftco argues this language contemplates that an “‘increased number of stitches’ placed ‘between high and low tufts’ will create an ‘enhanced density.’” (Doc. 182, at 9.) Though the Court sees how this language could be read in such a manner in isolation, the language does not overcome the language of the claims themselves. *See Straight Path IP Grp., Inc. v. Sipnet EU S.R.O.*, 806 F.3d 1356, 1361 (Fed. Cir. 2015) (noting that where claim language is clear, it controls over contrary language in the specification); *Vitronics*, 90 F.3d at 1582 (noting that the starting point for claim construction is the claims themselves). The weight of intrinsic evidence supports CMC’s reading. Accordingly, the Court will reject Tuftco’s argument that “density,” as used in the claims at issue, accounts for both high and low tufts. As to the density-per-square-inch limitation, Tuftco cites no support for this construction, and the Patent Trial and Appeal Board has previously rejected Tuftco’s attempts to import squared rather than linear constructions as inconsistent with the ‘505 Patent. (Doc. 129-1, at 8.)

Accordingly, the Court construes the term “density” as “the appearance of high or visible tufts of yarn per linear inch in the face of the tufted article that substantially matches the desired stitch rate.”

D. “Selected”/ “Selectively”

CMC’s Proposed Construction	Tuftco’s Proposed Construction
No construction needed OR “selected or chosen over another or others.” (Doc. 173, at 22.)	“chosen by the machine because it is required by or conforms to the pattern instructions programmed into the machine for the tufted article.” (Doc. 182, at 14.)

“Selected”/ “selectively” appears in Claims 22, 24, 27, 28, and 30 of the ‘989 Patent, and Claims 1, 28, and 29 of the ‘703 Patent. CMC argues no construction is needed, but if one is given, the term should be construed as “selected or chosen over another or others.” (Doc. 173,

at 22.) Tuftco initially did not propose a construction, but argued in its responsive brief that the term should be defined as “chosen by the machine because it is required by or conforms to the pattern instructions programmed into the machine for the tufted article.” (Doc. 182, at 14.)

Tuftco argues that because everyone knows “selected” means “chosen,” its definition is more helpful to the jury because it tells *how* something is chosen. At the *Markman* hearing, the Court asked both parties whether the term “selected”/“selectively” could be construed as “as dictated by the pattern” or “chosen as dictated by the pattern.” (Doc. 219, at 50, 98.) Tuftco did not object to the Court’s construction. (*Id.* at 98.) Although CMC acknowledged that, in effect, everything “selected” was “dictated by the pattern,” it argued against the Court’s proposal on the ground that it would unnecessarily read limitations into the claims. (*Id.* at 50.)

The Court understands the concerns of both parties. The Court is sympathetic to Tuftco’s complaint that merely saying something is “selected” may give the term too broad a potential reading. But, consistent with the Court’s construction of “desired stitch rate” (*see supra* Part III.A), the Court will reject the part of Tuftco’s proposed definition suggesting the selection must be programmed into the machine. The Court will not read limitations into the claims that are not supported by the claim language. *See Kara Tech. Inc.*, 582 F.3d at 1348.

The Court will adopt parts of both parties’ proposals and construe the terms as “chosen in accordance with the pattern.” This definition makes clear the yarn or tuft or color “selected” is chosen based on the pattern for the tufted article, while avoiding unduly constraining the term in a way not contemplated in the intrinsic evidence. The Court’s construction is confirmed by the claim language itself. For example, Claim 29 of the ‘703 Patent provides for “controlling feeding of the yarns to the needles *in accordance with the shift profile of the pattern* for the article to selectively form a number of high tufts of yarns and to selectively pull back loops of

yarns to form the pattern.” (‘703 Patent 12:46–50 (emphasis added).) The italicized language makes clear the selection is dictated by the pattern instructions. Thus, adding the language regarding the pattern instructions does not import a limitation not supported by the claims themselves. The construction is also consistent with the dictionary definition of “selected”/ “selectively” cited by CMC. (Doc. 173-7 (defining “selected” as “chosen in preference to another or others”).) For the reasons stated above, the Court construes the term selected/selectively to mean “chosen in accordance with the pattern.”

E. “Stitch Location”

CMC’s Proposed Construction	Tuftco’s Proposed Construction
No construction needed OR “a location in which one or more tufts of yarn can be presented into the backing based on the pattern instructions.” (Doc. 173, at 24.)	“a location in which a tuft of yarn is inserted into the backing based on pattern instructions.” (Doc. 182, at 19.)

“Stitch location”⁴ appears in Claim 30 of the ‘989 Patent. CMC proposes the term “stitch location” be construed as “a location in which one or more tufts of yarn can be presented into the backing based on the pattern instructions.” (Doc. 173, at 24.) Tuftco proposes “stitch location” be defined as “a location in which a tuft of yarn is inserted in the backing based on pattern instructions.” (Doc. 182, at 19.) The term appears in only one of the severed claims, Claim 30 of the ‘989 Patent, which states “at each stitch location, controlling feeding of the

⁴ Both parties agree “stitch” should not be divorced from its context within disputed terms. (Doc. 219, at 101.)

series of yarns presented at each stitch location and selectively retaining a desired yarn of the series of yarns presented at each stitch location based upon the pattern instructions.”

The distinctions between the two proposed constructions for “stitch location” are 1) CMC refers to any location a stitch *can be* inserted whereas Tuftco proposes the term be limited to locations where a stitch actually is inserted, and 2) CMC allows for more than one yarn to be inserted at a location whereas Tuftco does not.

Tuftco’s proposed construction is inconsistent with the intrinsic evidence, which makes clear there may be “stitch locations” where no yarn is inserted. For example, the specification of the ‘989 Patent provides that “double or greater jumps can be used to skip or bypass presentation of yarns to selected stitch locations, *such as locations where no yarn is selected for insertion.*” (‘989 Patent, 8:21–24 (emphasis added).) Other language from the specification confirms this reading. (*See, e.g.*, ‘989 Patent 9:58–60 (“If no yarns are selected for insertion at a particular pixel or stitch location, the needle bar further can be shifted to jump or otherwise skip or bypass presentation of the needles to that pixel or stitch location.”).) The language also confirms that more than one yarn can be retained at a stitch location. For example, Claim 22 of the ‘989 Patent states “at selected stitch locations, presenting a number of different yarns for insertion into the backing material and controlling the yarn feed to the needles so as to retain at least one desired yarn of the different yarns presented for each selected stitch location” (‘989 Patent 21:60–64.) Stating that at least one yarn must be retained in this claim makes clear the Patents contemplate instances in which more than one yarn might be retained at a particular stitch location.

Accordingly, the Court adopts CMC's construction. A "stitch location" is "a location in which one or more tufts of yarn can be presented into the backing based on the pattern instructions."

F. "Controlling"

CMC's Proposed Construction	Tuftco's Proposed Construction
"managing, directing, or regulating." (Doc. 173, at 23.)	"using an electronic computer control system to govern the operation of various apparatus such as yarn feed mechanisms, backing feed, and needle bar shifters in accordance with pattern instructions." (Doc. 182, at 16.)

"Controlling" appears in Claims 8 and 9 of the '505 Patent, Claims 21, 22, 24, 27, 28, and 30 of the '989 Patent and Claims 1, 28, and 29 of the '703 Patent. CMC suggests no construction is needed for the term "controlling," but suggests that if the Court does construe the term, it should be construed as "managing, directing, or regulating." (Doc. 173, at 23.) As support, CMC cites intrinsic evidence from the Patents and the dictionary definition of "controlling." (Doc. 173, at 23; Docs. 172-9, 173-10.) Tuftco proposes the term be construed as "[u]sing an electronic computer control system to govern the operation of the various apparatus such as the yarn feed mechanisms, backing feed, and needle bar shifters in accordance with programmed instructions." (Doc. 182, at 16.) CMC argues that limiting "controlling" to the controlling done by an electronic computer system is an unnecessary limitation not supported by the claims. (Doc. 219, at 52.)

The Court agrees with CMC that "managing, directing, or regulating" is the appropriate construction. This construction accords with the intrinsic evidence. For example, Claim 28 of the '989 Patent states "controlling feeding of the series of yarns presented at each stitch location

and selectively retaining a desired yarn of the series of yarns presented at each stitch location based upon the pattern instructions.” (‘989 Patent 24:1–5.) Similarly, the ‘505 Patent specification teaches “[t]he yarn color placement system further generally will include a pattern yarn feed mechanism or attachment for controlling the feeding of the yarns to their respective needles” (‘505 Patent, 2:26–28.) It is also consistent with the dictionary definition. (*See* Doc. 173-9 (defining “control” as “to regulate or operate”).) The language above makes clear the Patents use the word “controlling” consistently with this dictionary definition.

The Court rejects Tuftco’s proposed construction, because it attempts to import a limitation that does not appear in the claims. While the ‘505 Patent does provide that “[t]he tufting machine with the yarn color placement system of the present invention typically will include a tufting machine control system for controlling the operative elements of this tufting machine,” (‘505 Patent, 1:65–2:2), the Court is mindful not to “import a limitation from the specification into the claims,” *Kara Tech. Inc.*, 582 F.3d at 1348.

Accordingly, the Court construes “controlling” as “managing, directing, or regulating”.

IV. CONCLUSION

For the foregoing reasons, the Court **ADOPTS** the construction of the terms as stated above.

SO ORDERED.

/s/ Travis R. McDonough

TRAVIS R. MCDONOUGH
UNITED STATES DISTRICT JUDGE